

REMARKS

The Applicants submit the current Amendment in conjunction with a Request for Continued Examination of the present application filed concurrently with this Amendment. Certain claims have been amended as set forth above to overcome the Examiner's rejections stated in the final Office Action. The Examiner's allowance of all pending claims is earnestly solicited.

Claims 1-16 have been rejected under Section 102(e) as anticipated by Sheu (6,455,943).

To further define the invention over the art of record claim 1 has been revised to refer to "a bond pad level comprising a plurality of contact pads overlying the metallization interconnect system, one or more of the plurality of contact pads configured for connection external to the device and connected to the metallization interconnect system" and further, "an interconnect structure configured to transfer power from one or more of the plurality of contact pads connected to an external power source to the metallization interconnect system, wherein at least a portion of the interconnect structure configured to transfer power is disposed in the bond pad level and extends to other regions of the semiconductor substrate away from the plurality of contact pads." Support for this amendment is found in Figure 11 and the corresponding specification text paragraphs [0040] – [0042]. As the Applicants explain in paragraph [0027], by forming interconnect structures in the bond pad level ("wherein at least a portion of the interconnect structure configured to transfer power is disposed in the bond pad level") according to the teachings of the present invention, one metallization layer and the corresponding masks steps are eliminated.

Sheu discloses an interconnect structure, but as can be seen from Figures 2I and 3, there is no interconnect structure for transferring power wherein at least a portion of the interconnect structure for transferring power is disposed in the bond pad level and extends to other regions of the semiconductor substrate away from the plurality of bond pads, as set forth in Applicant's amended claim 1. In Sheu, the bond pad layer comprises the structures 218 in Figure 2I and the structures 314 in Figure 3. Neither Sheu's text nor figures disclose interconnect structures at least a portion of which is disposed in the bond pad level and extends to the other regions of the semiconductor substrate as claimed by the Applicants.

As can be clearly seen in Sheu's Figures, the various structures referred to by the Examiner are below the bond pad structures and thus cannot be situated "in the bond pad level."

Further, Sheu explains at column 5 beginning in line 26 that the bonding pad structure (referring to the various structures below the bond pad 218 in Figure 2I, below the bond pad 314 in Figure 3 and below the bond pad 412 in Figure 4) has no effective electronic function related to device operation, clearly distinguishing the Applicant's invention wherein the interconnect structures transfer power (claim 1) or are electrically connected to underlying levels (claim 12). Several times in his summary Sheu refers to the "bonding pad structure" and beginning at line 38 and again at line 47 of column 2, he describes the elements of his "bonding pad structure" as comprising those structures below the bond pad as illustrated in the referenced Figures.

In further support of this argument, note that beginning in line 26 of column 5, Sheu refers to "a multilevel interconnect structure of an integrated circuit which is not shown [in Figure 3], and the bonding pad structure has no effective electronic function of the device operation. Instead, the bonding pad structure is merely used to fasten and prevent the bonding pad layer 314 from peeling during the wire bonding process." A similar comment relative to the bonding pad layer 412 appears at line 56 of column 5. Thus since Sheu's structures below the bond pad in his various embodiments have no electrical function, the present invention is further distinguished.

Rejected claims 2 - 11 depend directly or indirectly from amended claim 1. Certain of these claims have been amended to comport with the amendments to claim 1 from which they depend. The Applicants respectfully submit that these claims are allowable as they each include one or more elements that further distinguish the art of record.

Claim 12 has been amended as set forth above to more clearly and concisely distinguish the Sheu reference. The comments above explaining the differences between the invention as claimed in claim 1 and the Sheu reference also apply to the rejection of claim 12.

At a minimum, there is no disclosure or suggestion in Sheu related to "an interconnect structure coplanar with at least one of the plurality of contact pads and electrically connected to underlying levels of the multilevel metallization interconnect system

away from the plurality of contact pads. Sheu does not disclose contact pads and an interconnect structure coplanar with at least one of the plurality of contact pads.

Rejected claims 13 - 16 depend directly or indirectly from independent amended claim 12. The Applicants respectfully submit that these claims are allowable as each includes one or more elements that further distinguish the art of record.

Claims 1, 10 and 26 have been rejected under Section 102(e) as anticipated by Greer (6,451,681).

In the rejection the Examiner identifies an uppermost bond pad level 716 in Greer's Figure 7, but there are no portions of interconnect structures configured to transfer power disposed in the bond pad level (i.e., 716) and extending to other regions of the semiconductor substrate away from the plurality of contact pads, as the Applicant's claim in amended claim 1.

If the Examiner assumed that Greer's copper fill material 124 comprises the bond pad level, there are no portions of interconnect structures configured to transfer power disposed in the bond pad level and extending to other regions of the semiconductor substrate away from the plurality of contact pads as claimed in amended claim 1.

Irrespective of its interpretation, neither the Greer reference (nor the Sheu reference) discloses or suggest "the interconnect structure . . . in the bond pad level." Greer's Figures 7 and 8 embodiments focus instead on laser alterable fuses, which are completely unrelated to the Applicant's invention.

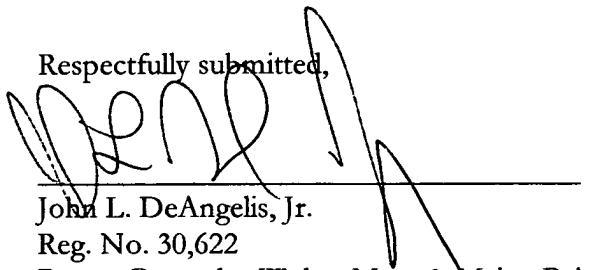
Rejected claims 10 and 26 depend from independent amended claim 1. The Applicants respectfully submit that these claims are allowable as each includes one or more elements that further distinguish the art of record.

It is believed that the claims as presented herein in conjunction with the Request for Continued Examination distinguish the invention from the art of record. It is therefore respectfully requested that the Examiner reconsider his rejections and issue a Notice of Allowance for all claims pending in the application.

The Applicants hereby petition for an extension of time of three months under 37 C.F.R. 1.136. A check is enclosed in payment of the extension of time fee.

If a telephone conference will assist in clarifying or expediting this Amendment or the claim changes made herein, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,



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CERTIFICATE OF MAILING

I HEREBY CERTIFY that the foregoing Amendment is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 27th day of December 2005.



John L. DeAngelis